apparatus which is the first embodiment of the present invention;

Fig. 2 is a block diagram which shows a matrix driving circuit of a liquid crystal display employed in the information display apparatus;

Fig. 3 is an illustration which shows display coordinates;

Fig. 4 is an illustration which shows display control;

Fig. 5 is an illustration which shows an exemplary picture on the display;

Fig. 6 is an illustration which shows an example of displaying motion pictures in a plurality of areas;

Fig. 7 is a sectional view of an exemplary liquid crystal display used as the display;

Fig. 8 is a plan view of the liquid crystal display which shows a state wherein a columnar structure and a sealant are formed on a substrate;

Fig. 9 is an illustration which shows a manufacturing process of the liquid crystal display;

Fig. 10 is a graph which shows the relationship between the voltage of a selective signal applied by the driving circuit and the Y value;

Figs. 11a and 11b are charts which show voltage waveforms applied to a test cell of the liquid crystal display;

Figs. 12a and 12b are charts which show a voltage waveform to drive the liquid crystal display;

Fig. 13 is a block diagram which shows a driving/image processing circuit of the liquid crystal display;

Fig. 14 is a front view of a portable telephone which is the second embodiment of the present invention;

Figs. 15a through 15e are illustrations which show a way of displaying information on the portable telephone;

Fig. 16 is a front view of a PDA which is the third embodiment of the present invention;

Fig. 17 is a side view of the PDA;

Fig. 18 is a schematic sectional view of a lid of the PDA;

Fig. 19 is a front view of a PDA which is the fourth embodiment of the present invention;

Fig. 20 is a schematic sectional view of a lid of the PDA;

Fig. 21 is an illustration which shows a picture displayed on the PDA;

Figs. 22a through 22d are illustrations which show a way of displaying information on the PDA;

Fig. 23 is an illustration which shows another way of displaying information on the PDA;

Fig. 24 is a front view of a mobile type terminal unit which is the fifth embodiment of the present invention;

Figs. 25a and 25b are illustrations which show a way of displaying information on the mobile type terminal unit;

Figs. 26a and 26b are illustrations which show another way of displaying information on the mobile type terminal unit;

Fig. 27 is a front view of a watch type terminal unit which is the sixth embodiment of the present invention;

Figs. 28a and 28b are illustrations which show a way of displaying information on the watch type terminal unit;

Fig. 29 is a front view of an information display apparatus which is the seventh embodiment of the present invention;

Fig. 30 is a schematic sectional view of the information display apparatus which is the seventh embodiment;

Fig. 31 is a front view of an information display apparatus which is the eighth embodiment of the present invention;

Fig. 32 is a schematic sectional view of the information display apparatus which is the eighth embodiment;

Fig. 33 is a schematic sectional view of an information display apparatus which is the ninth embodiment of the present invention;

Fig. 34 is a schematic sectional view of an information display apparatus which is the tenth embodiment;

Fig. 35 is a front view of an electronic book which is the eleventh embodiment of the present invention;

Fig. 36 is a front view of an electronic book which is the twelfth embodiment of the present invention;

Fig. 37 is a front view of an electronic book which is the thirteenth embodiment of the present invention;

Fig. 38 is a front view of a bulletin board which is the fourteenth embodiment of the present invention;

Fig. 39 is a block diagram of a driving section of an information display apparatus which is the fifteenth embodiment of the present invention;

Fig. 40 is a block diagram of the internal circuit of a first scan driver;

Fig. 41 is a chart which shows driving signal waveforms according to a first driving method;

Fig. 42 is a block diagram of the internal circuit of a second scan driver;

Fig. 43 is a chart which shows driving signal waveforms according to a second driving method;

Fig. 44 is a block diagram of the internal circuit of a data driver;

Fig. 45 is a block diagram of a driving section of an information display apparatus which is the sixteenth embodiment of the present invention;

Figs. 46a and 46b are illustrations which show a way of displaying information on the information display apparatus which is the sixteenth embodiment; and

Fig. 47 is a block diagram of a driving section of an information display apparatus which is the seventeenth embodiment of the present invention.

Delete the paragraph beginning at page 12, line 6, and ending at page 12, line 12, and replace with the following:

a3 cancel.

Fig. 4 shows this control in more detail. Here, the liquid crystal display 100 has 1024 pixels in each row (scan line) and 768 pixels in each column (data line). Each of the pixels is capable of displaying one byte of (256) tones or colors. The video memory 40 has 786432 (1024×768) addresses 00000h through CFFFFh, and its capacity is 786432 bytes. The liquid crystal display 100 has addresses A0 through A767 in the column direction and addresses B0 through B1023 in the row direction.

Delete the paragraph beginning at page 14, line 20, and ending at page 15, line 1, and replace with the following:

a4 cancel.

In the above-described control, one byte of data is used for one pixel, but for a display of a full-color image, three bytes of data are used for one pixel. In this case, although the volume of data to be stored is three times, other processes are performed in the same way. Otherwise, three memories may be provided for the red, green and blue display layers, respectively. In either case, in displaying a motion picture, the display layers are driven simultaneously, which results in a motion picture of a high quality without color dislocation.

Delete the paragraph beginning at page 16, line 13, and ending at page 16, line 19, and replace with the following:

a5 cont

Each of the display layers 111R, 111G, and 111B has a resin columnar structure 115, liquid crystal 116 and spacers 117 between transparent substrates 112 with transparent electrodes 113 and 114, respectively, thereon. On the transparent electrodes 113 and 114, an insulating layer 118 and an alignment controlling layer 119 are provided if

a5 cncl.

necessary. A sealant 120 is provided on the periphery of the substrates 112 to seal the liquid crystal 116 in the substrates 112.

Delete the paragraph beginning at page 25, line 20, and ending at page 26, line 9, and replace with the following:

a6 cncl.

In the liquid crystal display 100, the display state of the liquid crystal is a function of the voltage applied and the pulse width. By resetting the whole liquid crystal to the focal-conic state wherein the liquid crystal shows the lowest Y value (luminous reflectance) and thereafter, applying a pulse voltage with a constant pulse width to the liquid crystal, the display state of the liquid crystal changes as Fig. 10 shows. In the graph of Fig. 10, the y-axis indicates the Y value, and the x-axis indicates the voltage applied. When a pulse voltage Vp is applied, the liquid crystal comes to the planar state wherein the liquid crystal shows the highest Y value, and when a pulse voltage Vf is applied, the liquid crystal comes to the focal-conic state wherein the liquid crystal shows the lowest Y value. Also, when an intermediate pulse voltage between Vp and Vf is applied, the liquid crystal comes to an intermediate state between the planar state and the focal-conic state wherein the liquid crystal shows an intermediate Y value, and thus, a display of an intermediate color is possible.

Delete the paragraph beginning at page 34, line 4, and ending at page 34, line 14, and replace with the following:

a7 cnt

The display section of the sixth embodiment is basically the same as that of the fifth embodiment. Here, another way of displaying information on the display section is described. As Fig. 28a shows, when "current position" is inputted on the second display 332, a map and a mark A indicating the current position are displayed on the first display 331. The words "current position" are written on the second display 332 immediately but are erased soon for energy saving. It takes a relatively long time to

write a map on the first display 331. Once the map is written, however, it is continuously displayed even after stoppage of supply of electric power, which reduces the consumption of electric power.

a7 cncl.

Delete the paragraph beginning at page 35, line 26, and ending at page 36, line 10, and replace with the following:

A TFT liquid crystal display requires only a short time for writing and is suited to display a motion picture. It is, however, difficult to produce a TFT liquid crystal display with a large screen, and production of a large-sized TFT liquid crystal display is expensive. In the seventh embodiment, therefore, a large screen is made of cholesteric liquid crystal or chiral nematic liquid crystal which can be easily structured into a large-sized display. By using the respective advantages of the displays 351 and 352 and compensating the respective disadvantages of the displays 351 and 352 with each other, shortening of the writing time, enlarging of the screen, reduction of cost and energy saving can be achieved.

a8 cncl.

IN THE CLAIMS:

Please replace the previous version of the claims with the following clean version, wherein claims 1, 4-6, and 8-15 incorporate new amendments thereto, claims 2, 3, and 7 have been cancelled, and claims 16 and 17 have been added.